

Transistors

General purpose (dual digital transistors)

EMH3 / UMH3N / IMH3A

●Features

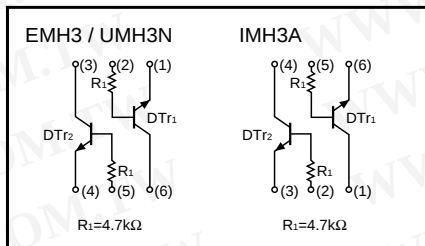
- 1) Two DTA13Ts chips in a EMT or UMT or SMT package.
- 2) Mounting possible with EMT3 or UMT3 or SMT3 automatic mounting machines.
- 3) Transistor elements are independent, eliminating interference.

●Structure

Epitaxial planar type
 NPN silicon transistor

The following characteristics apply to both DTr₁ and DTr₂.

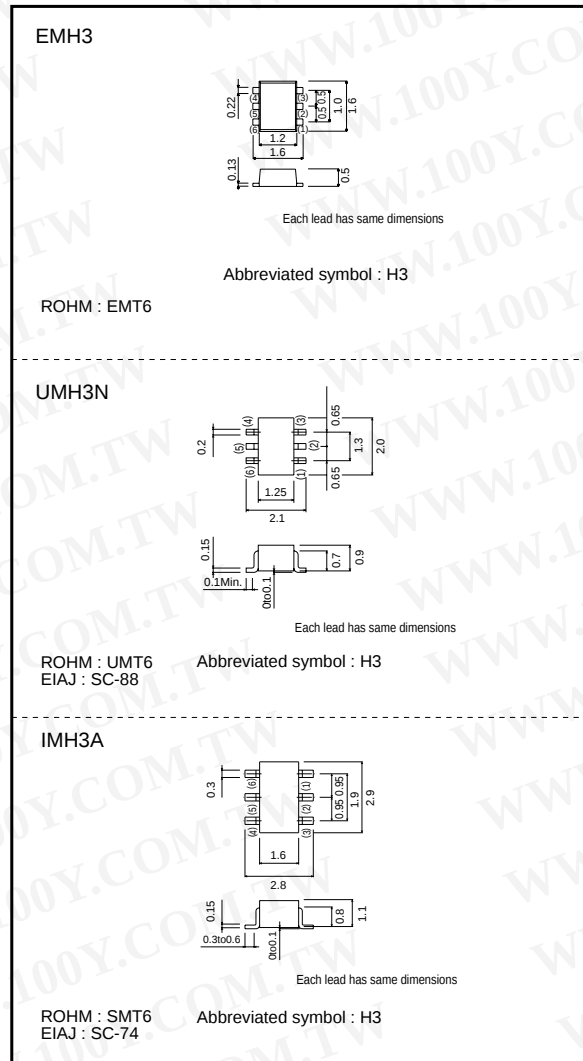
●Equivalent circuit



●Packaging specifications

Type	Package	Taping		
	Code	T2R	TN	T110
	Basic ordering unit (pieces)	8000	3000	3000
EMH3		○	—	—
UMH3N		—	○	—
IMH3A		—	—	○

●External dimensions (Unit : mm)



Transistors

●Absolute maximum ratings (Ta = 25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V _{CB0}	50	V
Collector-emitter voltage	V _{CEO}	50	V
Emitter-base voltage	V _{EB0}	5	V
Collector current	I _c	100	mA
Collector power dissipation	EMH3, UMH3N	150 (TOTAL)	mW *1
	IMH3A	300 (TOTAL)	
Junction temperature	T _j	150	°C
Storage temperature	T _{stg}	-55 to +150	°C

*1 120mW per element must not be exceeded.

*2 200mW per element must not be exceeded.

●Electrical characteristics (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV _{CB0}	50	—	—	V	I _c =50μA
Collector-emitter breakdown voltage	BV _{CEO}	50	—	—	V	I _c =1mA
Emitter-base breakdown voltage	BV _{EB0}	5	—	—	V	I _E =50μA
Collector cutoff current	I _{CB0}	—	—	0.5	μA	V _{CB} =50V
Emitter cutoff current	I _{EB0}	—	—	0.5	μA	V _{EB} =4V
Collector-emitter saturation voltage	V _{CE(sat)}	—	—	0.3	V	I _c /I _E =5mA/0.25mA
DC current transfer ratio	h _{FE}	100	250	600	—	V _{CE} =5V, I _c =1mA
Transition frequency	f _T	—	250	—	MHz	V _{CE} =10V, I _E =-5mA, f=100MHz *
Input resistance	R _i	3.29	4.7	6.11	kΩ	—

* Transition frequency of the device

●Electrical characteristic curves

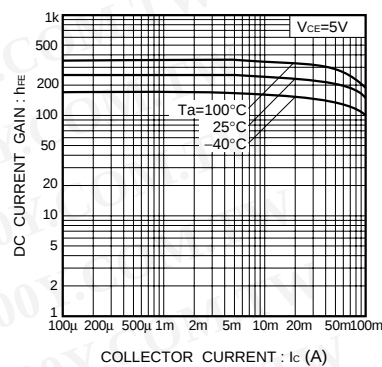


Fig.1 DC current gain vs. collector current

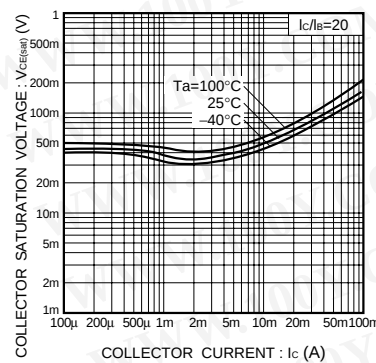


Fig.2 Collector-emitter saturation voltage vs. collector current

Appendix

Notes

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